WHAT IS CLAIMED IS:

1. An analyte detection system for detecting more than one analyte, the system comprising:

an analyte detection device configured to measure a concentration of first and second analytes in a material sample;

a processing circuit configured to determine whether a concentration of said first analyte falls within a previously-specified range, and activates said analyte detection device to measure a concentration of a second analyte if said concentration of said first analyte falls outside of said previously specified range.

2. The system of Claim 1, wherein an upper value of said previously-specified range is at least about 200mg/dL of said first analyte.

3. The system of Claim 1, further comprising an alert device coupled to the processing circuit, wherein the processing circuit is further configured to activate the alert device when said concentration of said first analyte falls outside of said previously-specified range.

4. The system of Claim 1, wherein said first analyte is glucose.

5. The system of Claim 1, wherein the second analyte is a ketone.

6. The system of Claim 5, wherein the second analyte is selected from the group consisting of beta-hydroxy-butyrate, acetoacetate and acetone.

7. An analyte detection system for detecting more than one analyte, the system comprising:

a sample element configured to receive a single material sample for analysis;

an analyte detection device configured to measure a concentration of first and second analytes in said material sample.

8. The system of Claim 7, further comprising a processing circuit which controls said analyte detection device to measure a first concentration of a first analyte in said sample, and subsequently to measure a second concentration of a second analyte in said sample.

9. The system of Claim 7, the detection device further comprising an optical source and a detector defining an optical path therebetween.

10. The system of Claim 8, wherein the processing circuit is further configured to measure said second concentration of said second analyte only after determining that said first concentration of said first analyte exceeds a previously-specified value.

11. The system of Claim 10, wherein said previously-specified value is at least 180 mg/dl.

12. The system of Claim 7, wherein said analyte detection device is an absorption spectroscopy device.

13. The system of Claim 12, wherein said analyte detection device comprises an array of optical filters.

14. The system of Claim 13, wherein said array of optical filters comprises a filter wheel.

15. The system of Claim 13, wherein said array of optical filters comprises an electronically tunable filter.

16. A device for measuring a concentration of an analyte in a material sample, said device comprising:

an optical source configured to emit electromagnetic radiation in a range of about 4.275 to about 10.060 μm;

a detector positioned with respect to the source, so that the source and the detector define an optical path therebetween;

a sample element configured to support a material sample in said optical path;

a first array of filters disposed in said optical path between said sample element and said source, said first array of filters being configured to allow electromagnetic radiation of a first set of previously determined values to impinge on the sample element, the first set of previously determined values associated with a first analyte;

a second array of filters disposed in said optical path between said sample element and said source, said second array of filters being configured to allow electromagnetic radiation of a second set of previously determined values to impinge on the sample element, the second set of previously-determined values associated with a second analyte .

17. The device of Claim 16, wherein the second set of previously determined values includes wavelengths selected from the group comprising: about 7.8 μm, about 8.3 μm, about 10.55 μm and about 10.7μm.

18. The device of Claim 16, wherein the second set of previously determined values includes a wavelength of about 10.55 ±.2 μm.

19. The device of Claim 16, wherein the first array of filters comprises an electronically-tunable optical filter.

20. The device of Claim 16, wherein the second array of filters comprises an electronically-tunable optical filter.

21. A method for measuring concentrations of a plurality of analytes in a single sample, the method comprising:

providing a material sample;

providing an analyte detection system;

measuring a first concentration of a first analyte in said material sample with said analyte detection system;

determining whether said first concentration of said first analyte exceeds a first previously-specified value, or is less than a second previously-specified value; and

measuring a second concentration of a second analyte in said material sample if said first concentration exceeds said first previously-specified value or if said first concentration is less than said second previously-specified value.

22. The method of Claim 21, wherein said first previously-specified value is at least about 200 mg/dl.

23. The method of Claim 21, wherein said first analyte is glucose.

24. The method of Claim 23, wherein the second analyte is a ketone.

25. The method of Claim 24, wherein the second analyte is selected from the group consisting of beta-Hydroxy-butyrate, acetoacetate and acetone.

26. The method of Claim 21, further comprising simultaneously displaying a value corresponding to the concentration of said first analyte and a value corresponding to the concentration of the second analyte.

27. The method of Claim 21, wherein said determining step is performed by said analyte detection system.

28. A method of determining a medical condition using an analyte detection system, the method comprising:

providing an analyte detection system comprising an optical source and a detector defining an optical path therebetween;

providing a sample element for receiving a material sample for analysis;

engaging a material sample from a patient with the sample element, and placing the sample element in the analyte detection system;

measuring a first concentration of a first analyte in said sample; and

measuring a second concentration of a second analyte in said sample without removing said sample element.

29. The method of Claim 28, wherein measuring a second concentration of a second analyte is performed after determining that said first concentration of said first analyte exceeds a previously-specified value.

30. The method of Claim 28, wherein said measuring said first concentration of said first analyte is performed using absorption spectroscopy.

31. The method of Claim 30, wherein said absorption spectroscopy includes providing a filter array for analyzing an intensity of electromagnetic radiation having a wavelength of about 10.55 μm and about 10.7μm.

32. The method of Claim 31, wherein said measurement of said second concentration comprises a total dwell time of between about 30 and about 40 seconds.

33. The method of Claim 28, wherein said measuring said second concentration of said second analyte is performed using absorption spectroscopy.

34. The method of Claim 33, wherein said absorption spectroscopy includes providing a filter array for analyzing an intensity of electromagnetic radiation having wavelengths associated with the first and second analytes.

35. The method of Claim 34, wherein said measurement of said second concentration comprises a dwell time of between about 15 and about 20 seconds.

36. The method of Claim 28, further comprising simultaneously displaying concentration values of both said first and said second analyte concentrations.